**Quantitative Marketing and Economics**

**2013 Conference Schedule**

**September 27 – 28, 2013**

Gleacher Center, University of Chicago

**Sponsored by**

James M. Kilts Center for Marketing, University of Chicago Booth School of Business

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**Friday, September 27th**  Gleacher Center, Room 100

12:00 p.m. – 12:45 p.m.  Lunch

12:45 p.m. – 1:00 p.m.  Welcome

1:00 p.m. – 2:00 p.m.  Session 1

*An Empirical Study of Observational Learning*

Peter W. Newberry (Pennsylvania State University)

This paper is an empirical examination of observational learning. Using data from an online market for music, I find that observational learning is a valuable tool for the producers of high quality products and for consumers, but not necessarily for the online platform. I also study the role of pricing as a friction to the learning process by comparing outcomes under a demand based pricing scheme to the counterfactual outcomes under a fixed price. I find that a price of 99 cents per song (the traditional price in the industry) hampers learning by reducing the incentive to experiment.

Discussant: Juanjuan Zhang (MIT)

2:00 p.m. – 3:00 p.m.  Session 2

*The Intergenerational Transmission of Automobile Brand Preferences: Empirical Evidence and Implications for Firm Strategy*

Soren T. Anderson (Michigan State), Ryan Kellogg (University of Michigan), Ashley Langer (University of Michigan), James M. Sallee (University of Chicago)

We document a strong correlation in the brand of automobile chosen by parents and their adult children, using data from the Panel Study of Income Dynamics. In our preferred estimates, children are 46% more likely to choose an automobile brand if their parents also chose that brand. Correlation in intrafamily brand choice could represent a causal transmission of brand preference, or it could be due to correlated family characteristics that determine brand choice. We present a variety of empirical specifications that lend
support to the causal interpretation. We then discuss implications of intergenerational brand preference transmission for automakers and market outcomes, noting that such transmission has implications for the optimal product-line strategy of firms as well as for their strategic pricing of vehicles that are targeted at different age groups.

Discussant: Raphael Thomadsen (Washington University in St. Louis)

3:00 p.m. – 3:30 p.m.      BREAK

3:30 p.m. – 4:30 p.m.      SESSION 3

Advertising Spillovers: Field-Experiment Evidence and Implications for Returns from Advertising
Navdeep Sahni (Stanford)

Ads can remind consumers of options other than the advertised product. Therefore, while choosing among the options, consumers exposed to ads are likely to consider the advertiser's competitors along with the advertised option. This added consideration benefits the competitors and reduces the advertiser's own gains from advertising. The advertiser can overcome the spillovers by increasing the intensity of advertising which enhances the chance of the consumer purchasing the advertised product. Using data from online field experiments on a restaurant-search website, I overcome challenges in measuring the ad effects by randomly altering both ad exposure and its frequency at the individual level. Consistent with the spillover mechanism, I find that online ads benefit strong competitors in the advertiser's category, i.e. highly rated competing restaurants serving the advertiser's cuisine gain by 30% on average. Compared to no ads, few ad exposures increase sales leads for the advertiser by 20% and for other same-cuisine restaurants by 10% on average. When ad exposure intensity is increased, the spillovers disappear and the advertiser gains more. In the presence of inertia in consumer choice over time, broader awareness due to ads also impacts the long term effects of advertising.

Discussant: Jesse Shapiro (University of Chicago)

4:30 p.m. – 5:30 p.m.      SESSION 4

Estimation of Beauty Contest Auctions
Hema Yoganarasimhan (University of California, Davis)

Beauty contest auctions are procurement mechanisms where the auctioneer does not specify an allocation rule; instead he picks a winner based not only on price, but also other considerations such as reputation or quality. Unlike traditional price-only auctions, beauty contests have no closed-form bidding strategies and suffer from non-multiplicatively separable unobserved auction heterogeneity, which makes their estimation challenging. To address these challenges, we formulate beauty contests as incomplete information games, and present a two-step method to estimate them. A key contribution of our method is its ability to account for common knowledge unobservables in the context of two-step methods using finite unobserved types. We show that unobserved auction types and distributions of bids are nonparametrically identified and recoverable in the first step using a nonparametric EM-like algorithm, which can then be used in the second step to recover cost distributions. We present an application of our method in the online freelancing context. We find that seller margins/marketpower in this marketplace are around 15%; and that not accounting for unobserved heterogeneity can significantly bias estimates of costs in this setting. Based on our estimates, we run counterfactual simulations and provide guidelines to managers of freelance firms.

Discussant: Greg Lewis (Harvard)
An Empirical Study of the Dynamics of Brand Building
Ron N. Borkovsky (University of Toronto), Avi Goldfarb (University of Toronto), Avery Haviv (University of Toronto), Sridhar Moorthy (University of Toronto)

In this paper, we explore the dynamics of brand building in a model in which firms use advertising to build and sustain brand equity. Our framework allows us to address several fundamental questions on the nature of brand-building in the presence of competition: How strong are the leading firm’s incentives to perpetuate its brand equity advantage? How strong are the follower’s incentives to overcome the gap it faces? How efficient is the conversion of advertising into brand equity and how quickly does brand equity depreciate? We estimate our model using data from the stacked chips category, a brand-focused duopoly that displays interesting brand equity dynamics over time. We also devise a new tool for measuring brand value in a dynamic equilibrium context, providing a more complete measure of the value of a brand as an intangible asset. Using this tool, we assess the effects of changes in industry fundamentals on brand value. This yields several counterintuitive results. For example, we find that an increase in the rate at which brand equity depreciates can reduce the expected net present value of a firm’s future cash flows while simultaneously increasing the expected net present value of the cash flows driven by its brand. Thus firm value can fall while brand value rises.

Discussant: Bryan Bollinger (NYU)

Customer Relationship and Sales
Shouyong Shi (University of Toronto)

I analyze a search equilibrium in a large market where customer relationship based on past trade arises endogenously together with service priority and sales. Specifically, there exists a unique equilibrium where it is optimal for a buyer to make repeat purchases from the related seller and optimal for a seller to give service priority to the related buyer. Customer relationship always improves welfare by reducing search frictions, but the equilibrium is socially efficient only when the buyer/seller ratio in the market is below a critical level. When the buyer/seller ratio exceeds this critical level, the equilibrium is inefficient because it fails to induce the coexistence of trading priority for related buyers and partial mixing of buyers for related sellers. Customer relationship induces price variations for individual sellers over time even when market conditions do not change. A seller posts a (high) regular price to sell to the related buyer and, once the seller loses the relationship, the seller posts a (low) sale price to sell to unrelated buyers until he gains a relationship. I also examine how market conditions affect the aggregate stock of relationships, markups, the size and the duration of a sale.

Discussant: Pinar Yildirim (University of Pennsylvania)
11:00 a.m. – 11:30 a.m.   Break

11:30 a.m. – 12:30 p.m.   Session 7

*Drip Pricing When Consumers Have Limited Foresight: Evidence from Driving School Fees*
David Muir (University of Pennsylvania), Katja Seim (University of Pennsylvania), Maria Ana Vitorino (University of Minnesota)

This paper empirically investigates the add-on or “drip” pricing behavior of firms in the Portuguese market for driving instruction. We present a model along the lines of Gabaix and Laibson (2006) in which consumers purchase a base and, with some probability, an add-on product from the same firm, but are not always aware of the possible need for the add-on product. We show that a typical loss leader pricing strategy emerges whereby markups on the upfront product are artificially lowered, while firms price the add-on at monopoly levels. We then test the implications of the model using a detailed snapshot of industry data on student characteristics and preferences, school attributes including prices and costs, and market demographics for a cross-section of local markets with differing numbers of school competitors. We find significant evidence in support of the model predictions, including that firms face a substantial profit motive in the add-on market. Most notably, markups for the base product, but not the add-on products, decline in the number of competitors a firm faces, a prediction that has not been established in the literature to date. Finally, we estimate an empirical version of the model to show that approximately one-quarter of students are not aware of the add-on when making their school choice. This result has important policy implications about the cross-subsidization from those students who are unaware of the add-on to those who are.

Discussant: Kanishka Misra (University of Michigan)

12:30 p.m. – 1:30 p.m.   Lunch

1:30 p.m. – 2:30 p.m.   Session 8

*Decision Stages and Asymmetries in Regular Retail Price Pass-through*
Blakeley McShane (Kellogg School of Management), Chaoqun Chen (Kellogg School of Management), Eric T. Anderson (Kellogg School of Management) Duncan I. Simester (MIT)

We study how a major retailer passes wholesale price changes onto its regular retail prices using an unusually detailed dataset that allows us to study discrete price change events. The data reveals that the pass-through decision has two components: the firm decides whether to change its regular retail prices, and then conditional on this decision, it selects the magnitude of the price change. Situational factors influence each component of this decision differently. The results also reveal a striking level of asymmetry in the response to wholesale price increases versus decreases. The firm passes wholesale price increases onto its regular retail prices over 60% of the time, with both the likelihood and magnitude of the regular retail price change depending on the magnitude of the wholesale price increase. However, it passes wholesale price decreases on only about 15% of the time, with both the likelihood and magnitude of the regular retail price change largely uninfluenced by the magnitude of the cost decrease.

Discussant: Paul Ellickson (University of Rochester)
2:30 p.m. – 3:30 p.m.  SESSION 9

*Consumer Heterogeneity and Paid Search Effectiveness: A Large Scale Field Experiment*

Chris Nosko (University of Chicago), Steven Tadelis (UC Berkeley and eBay Research Labs), Thomas Blake (eBay Research Labs)

Internet advertising has been the fastest growing advertising channel in recent years with paid advertisements on search platforms (e.g., Google and Bing) comprising the bulk of this revenue. We present results from a series of large-scale field experiments done at eBay that are designed to detect the causal effectiveness of paid search advertisements. Results show that brand-keyword ads have no short-term benefits, and that returns from all other keywords are a fraction of conventional estimates. We find that new and infrequent users are positively influenced by ads but that existing loyal users whose purchasing behavior is not influenced by paid search account for most of the advertising expenses, resulting in average returns that are negative. We discuss substitution to other channels and implications for advertising decisions in large firms.

Discussant: Florian Zettelmeyer (Northwestern)

3:30 p.m. – 4:00 p.m.  BREAK

4:00 p.m. – 5:00 p.m.  SESSION 10

*Simultaneous or Sequential? Search Strategies in the U.S. Auto Insurance Industry*

Elisabeth Honka (University of Texas at Dallas), Pradeep Chintagunta (University of Chicago)

Whether consumers use simultaneous or sequential search strategies to resolve uncertainty has been a question of interest among researchers. In this paper, we explore whether the search strategy consumers use is identified in cases where researchers observe consumers’ consideration sets (but not the sequence of searches) in addition to their purchases, price distributions, prices for the considered alternatives and other characteristics. We show that the search method is identified by the difference in the pattern of actual prices in consumers’ consideration sets across the two methods. Next, we provide an approach to estimating the parameters of a sequential search model with these data; thereby complementing earlier work that has estimated a simultaneous search model with such data. We then undertake a comprehensive simulation study to understand the implications of making an incorrect assumption on search method for model fit and estimated parameters. Conditional on our assumed functional form for consumers’ utility functions, we find that the correctly specified model recovers the true parameters whereas the incorrectly specified one does not. The latter model also results in an inferior fit to the data in all replications of the simulation and for both search methods reflecting the inability of the model to reflect the price patterns corresponding to the incorrect specification. We extend our simulations to examine several assumptions made in the empirical literature on search. Then, using a novel data set on consumer shopping behavior in the U.S. auto insurance industry that contains information on consideration sets as well as choices, we look at the patterns in the price data to see whether the data are consistent with simultaneous or sequential search. We then study the consequences of assuming either sequential or simultaneous price search on consumers’ estimated preferences, price sensitivities and search costs. Our model-free evidence suggests simultaneous search and the simultaneous search model also provides a better fit to the data than the sequential model. We find consumer search costs of $42. A sequential search model results in very different estimates of consumers’ preference parameters. We also explore the implications of our results for insurance companies and for consumers. We find that the largest insurance companies are better off when consumers search sequentially, while smaller companies profit from consumers searching simultaneously.

Discussant: Stephan Seiler (Stanford)